

REMARKS

Claims 1, 5, 6, 8-12, 15, 16, 18, and 21-26 are all of the claims presently pending in the application. Applicants have amended claim 23 to define the claimed invention more particularly. Applicants have added claims 25 and 26 to claim additional features of the invention and to vary the protection for the claimed invention further.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1, 5, 6, 8-12, 15, 16, 18, and 21-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchida (U.S. Patent No. 6,897,430). Claims 10, 11, 15, and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchida in view of Verdiell.

Applicants respectfully traverse these rejections in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention of exemplary claim 1, provides an optoelectronic hybrid integrated module wherein the optical device and the input/output IC are flip-chip mounted on a surface of the transparent base material substantially aligned with the light coupling means, such that light coupling is performed in a direction other than a direction horizontal with respect to the transparent base material, (e.g., see Application at Figure 1, page 4, line 25 through page 5, line 11, and page 10, lines 12-25). This allows the number of components and

processes of the module to be reduced so that mounting costs can be suppressed (e.g., see Application at page 5, lines 20-23).

II. THE PRIOR ART REFERENCES

A. The Uchida Reference

The Examiner alleges that the claimed invention of claims 1, 5, 6, 8-12, 15, 16, 18, and 21-24 would have been obvious in view of Uchida. Applicants submit, however, that, Uchida does not teach or suggest each and every feature of the claimed invention.

Applicants maintain the position set forth in the Amendment filed under 37 C.F.R. § 1.116 on June 5, 2008.

That is, Applicants maintain Uchida does not teach or suggest, “*a transparent base material having electric wiring and light permeability, the transparent base material including a light coupling means at a position substantially facing the optical device, wherein the optical device and the input/output IC are flip-chip mounted on a surface of the transparent base material substantially aligned with the light coupling means, such that light coupling is performed in a direction other than a direction horizontal with respect to said transparent base material*”, as recited in exemplary claim 1, similarly recited in exemplary claim 12, and somewhat similarly recited in exemplary claim 23.

In response to Applicants’ arguments, the Examiner alleges, with respect to Uchida, “Figure 4 ‘1210’ shows the path of light are (*sic*) being transmitted horizontally, further ‘1208’ shows light being transmitted vertical with respect to the transparent base material ‘1206’.” (See Office Action dated October 8, 2008 at page 3). The Examiner, however, is clearly incorrect.

Indeed, the Examiner has based the position above solely on Figure 4 of Uchida.

Figure 4 of Uchida merely illustrates horizontal arrows 1210, 1211 and vertical arrows 1203. Figure 4 of Uchida, however, does not indicate what the arrows represent. In the specification, Uchida discloses that the horizontal arrows 1210, 1211 represent light propagating through the core layer. The vertical arrows 1203, however, represent electrical signals (see Uchida at column 7, lines 20-34).

Indeed, the light in Uchida travels along the planar direction of its transparent base material. Compared to this, when the optical device acts a light emitting device, the light in the claimed invention passes through the transparent base material in a direction approximately perpendicular to a surface thereof (see the arrow in Figure 1 of the present application). Then, the light further passes through the oncoming coupling means to be outputted, as shown in Figure 1.

Thus, the structure of Uchida is different from that of the claimed invention. That is, in Uchida, the optical signal propagates only in a horizontal direction.

Moreover, Applicants submit that the alleged optical device 1201, 1208 of Uchida, is clearly not flip-chip mounted on a surface of the transparent substrate 1205, 1206, 1207 (see Uchida at Figure 4). Indeed, the alleged optical device is “embedded in the core layer 1206” (see Uchida at column 7, lines 35-37).

In rejecting claim 9, the Examiner alleges, “*notice in Fig. 4 that the light receiver and the light transmitter also acts as an axis converter wherein the light axis is changed and referenced by the directionality of the arrows (1203, 1208).*”

In Figure 4 of Uchida, however, the upward-pointing arrow in 1201 and the downward-pointing arrow in 1208 both indicate electrical signals. The optical signal

propagates only in a horizontal direction. As such, the alleged axis converter of Uchida is different from that of the claimed invention.

Therefore, Applicants submit that, even if combined, the alleged combination of references would not teach or suggest each and every feature of the claimed invention. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

B. The Verdiell Reference

The Examiner alleges that one of ordinary skill in the art would have combined Verdiell with Uchida to teach the claimed invention of claims 10, 11, 15, and 16. Applicants respectfully submit, however, that, even if combined, the alleged combination of references would not teach or suggest every feature of the claimed invention.

That is, claims 10, 11, 15, and 16 are allowable at least based on similar reasons to those set forth above, in section A, with respect to claims 1, 5, 6, 8-12, 15, 16, 18, and 21-24.

Therefore, Applicants respectfully submit that, even if combined, the alleged combination of references would not teach or suggest every feature of the claimed invention. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

III. NEW CLAIMS

Applicants have added new claims 25 and 26 to claim additional features of the invention and to vary the protection for the claimed invention further. These claims are independently patentable because of the novel and nonobvious features recited therein.

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For example, the applied references do not teach or suggest, “*wherein light emitted from said optical device, said optical device being flip-chip mounted on a first surface of said transparent base material, passes through said transparent base material approximately perpendicular to the surface of said transparent base material and is emitted from said transparent base material approximately perpendicular to a second surface of said transparent base material, the second surface comprising a surface opposite the first surface*”.

Indeed, in Uchida, light horizontally propagating through the core layer 1206 is received by a first optical device 1201 (which is not flip chip mounted on a surface of a transparent base material). The first optical device 1201 converts the light into an electric signal and passes the electric signal to an electronic device 1103. The second optical device 1208 receives the electric signal and emits light into the core 1206. The light propagates through the core 1206 horizontally. The light is not emitted from the alleged transparent base material approximately perpendicular to a surface of the alleged transparent base material.

Applicants submit that new claims are patentable over the cited prior art references at least for analogous reasons to those set forth above with respect to claims 1, 5, 6, 8-12, 15, 16, 18, and 21-24.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicants submit that claims 1, 5, 6, 8-12, 15, 16, 18, and 21-26, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. Applicants respectfully request the Examiner to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance,

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Applicant s requests the Examiner to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The undersigned authorizes the Commissioner to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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